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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,626	04/02/2004	Shunichiro Tanigawa	16CT03006	1052

7590 11/16/2005

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EXAMINER
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KAO, CHIH CHENG G

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

JK

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/816,626	TANIGAWA ET AL.	
	Examiner	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 4 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/2/04, 11/22/04</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Information Disclosure Statement*

1. Please note that foreign patent document JP 07-171145 listed in the copy of the IDS filed 4/2/04 has a line drawn through because it has already been considered as evidenced by the Examiner's initials in the copy of the IDS filed 11/22/04. All pages corresponding to JP 07-171145 that are in the current application have been considered by the Examiner.

### *Drawings*

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: (fig. 4, S1-S10).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

3. Claims 1-4 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following corrections may obviate their respective objections: (claim 1, line 7, "the results"; deleting "the"), (claim 2, line 2, "the final correction coefficient"; replacing "the" with - a- -), (claim 2, lines 2-3, "the first correction coefficient"; replacing "the" with - a- -), (claim 2, line 3, "the second correction coefficient"; replacing "the" with - a- -), (claim 3, line 6, "the beam-hardening effect"; replacing "the" with - a- -), (claim 3, line 10, "the third projection information values"; deleting "the"), (claim 3, line 12, "the second projection information values"; deleting "the"), (claim 3, line 13, "of the channels"; replacing "of the channels" with - channel- -), (claim 4, line 8, "the beam-hardening effect"; replacing "the" with - a- -), (claim 4, line 12, "the third projection information values"; deleting "the"), (claim 4, lines 13-14, "the second projection information values"; deleting "the"), and (claim 4, lines 14-15, "of the channels"; replacing "of the channels" with - channel- -).

For purposes of examination, the claims have been treated as such. Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feldman et al. (US Patent 5095431) in view of Horiba et al. (US Patent 4352020).

Feldman et al. discloses a method comprising the steps of positioning a phantom, which has an oblong section (fig. 4, #32), in a scan field between an X-ray source (fig. 4, #30) and an X-ray detector (fig. 4, #31), and scanning the phantom (fig. 4, #32) from plural directions so as to acquire a plurality of views (col. 4, lines 46-51 and 56-65), and calculating a correction coefficient (fig. 5), which is used to correct projection information to be acquired from a subject (abstract), using results of the scan.

However, Feldman et al. fails to disclose an X-ray tube.

Horiba et al. teaches an X-ray tube (fig. 1, #14).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the method of Feldman et al. with the X-ray tube of Horiba et al., since one would be motivated to make such a modification to better control the X-rays (fig. 1, #14) as implied from Horiba et al.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feldman et al. ('431) and Horiba et al. as applied to claim 1 above, and further in view of Feldman et al. (FR 2656697).

Feldman et al. ('431) as modified above suggest a method as recited above.

However, Feldman et al. ('431) fails to disclose wherein a final correction coefficient is calculated as an average between a first correction coefficient and a second correction coefficient.

Feldman et al. ('697) teaches wherein a final correction coefficient is calculated as an average between a first correction coefficient and a second correction coefficient (page 5 of the translation, lines 8-18).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to incorporate the method of Feldman et al. ('431) as modified above with the final correction coefficient of Feldman et al. ('697), since one would be motivated to make such a modification for better image contrast (page 1 of the translation, lines 1-13) as implied from Feldman et al. ('697).

***Allowable Subject Matter***

6. Claims 3 and 4 contain allowable subject matter. The following is a statement of reasons for the indication of allowable subject matter.

Regarding claims 3 and 4, prior art fails to disclose or fairly suggest a method or system including fitting a first function to second projection information so as to produce third projection information, fitting a second function to third projection information values, the third

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projection information values provided as functions having as independent variables second projection information values that are sampled in relation to all views and each channel of an X-ray detector constituting the second projection information, and correcting projection information acquired from a subject, who is positioned in the scan field, using a correction function obtained as the second function, in combination with all the limitations in each respective claim.

### *Conclusion*

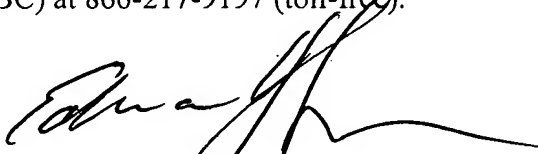
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gk



**EDWARD J. GLICK**  
**SUPERVISORY PATENT EXAMINER**